SVSi CONTROL SOLUTIONS PROTOCOL

N8001

The SVSi Conductor N8001 is a web-based Controller, supports up to 5 simultaneous users and 50 devices, includes simplified ASCII interface for third party control via telnet or TCP/IP.

7.5” x 7.5” x 1.5”
3-lbs
Standalone Unit

Eth1 – 192.168.1.99
AND 169.254.10.99

N8002

The SVSi Conductor N8002 is a rack-mount 2RU web-based Controller; supports unlimited users and devices, includes simplified ASCII interface for 3rd party control via telnet or TCP/IP.

17” x 15.5” x 3.5”
17-lbs
Rack-Mount Unit

Eth0 – 192.169.1.99
Eth1 – 169.254.10.99

The video, keyboard, mouse and additional I/O on the back of the unit are not utilized for daily operation. You will not be able to access the Conductor software from the unit directly. There is no need to attach a keyboard/mouse or monitor to the unit.

ACCESSING CONDUCTOR:

Conductor has a web based interface. To access the interface, open a web browser and navigate to the unit’s IP Address. SVSi recommends Google Chrome or Mozilla Firefox for this.

Default User Name: admin
Default Password: password

ENABLE THIRD PARTY CONTROL:

The control system will need to establish a single persistent socket connection between the control system and the Conductor Unit. The socket will need to connect to port 50020. For common control systems like Crestron or AMX please download the latest modules off our website http://svsiav.com/support/resources/software.

Software on the Conductor will need to be updated if the version currently installed is prior to the December 2013 update. Units with older software will need to connect and control the Conductor with a telnet session on Port 50008, and will not able to utilize the push notification system detailed below. Contact Technical support to receive the appropriate files to update conductor if running software prior to December 2013.

FOR MULTIPLE PROCESSORS/BRANDS:

There is virtually no limit to the number of connections that can be established between third party control systems and the Conductor Units. However, it is recommended if an application will require greater than 80 connections, that a second unit be purchased for load balancing applications, or master/slave setups. Please contact technical support about your application if you have questions about this process.

SYSTEM SETUP UTILIZING PUSH NOTIFICATIONS

Starting with version 2/19/2013, Conductor now supports push notification system for Third Party Control Systems, as well as raw socket (versus Telnet) connections. The advantages of this system are:

1) No polling needed. When conductor detects a change in one of the monitored fields, the unit will send a notice to the third party control system with the update for the unit.
2) Simplified Status packets for all monitored devices. Details are in the below tables, but the status packet now contains all relevant information for system operation and monitoring.

TO ENABLE PUSH NOTIFICATIONS FOR DEVICES

1) Every time a connection is initiated, a monitor command must be sent out from the third party control system with the ip address of the device to be monitored. This command is:
   monitor <IPAddress> CRLF
2) After a device is monitored, the status of that device will be reported when a change occurs. To get the status of a monitored device at any time (when no changes have occurred) send the following command:
   monitornotify <ipAddress> CRLF
3) The simplified status responses are detailed in the tables below.
4) If a connection is dropped, the monitor command must be resent when the connection is re-established.
5) Simplified status packets are encapsulated in an XML block of <status>...</status> additional messages may be sent from Conductor to the control system (verbose messages including switch confirmations, and command acknowledgments)

TELNET SESSIONS:

Conductor Units may also be controlled via Telnet Sessions utilizing port 50008. Legacy control system integration utilized this method for control. Legacy programs will continue to function utilizing telnet via port 50008. This is also a useful tool for system programmers to test commands prior to integrating with a third party control system.

COMMAND STRUCTURE:

All Commands detailed below follow the same general format. They can be generated from within Conductor Software by going to Tasks > Scripts and utilizing the drop down menus to automatically generate control codes. For those pre-programming hardware, utilize the tables below to determine your commands following this structure. All fields are separated by a space.

<action> <destination> <requiredInformation>

OR

Switch 169.254.10.104 221

PANEL BUILDER:

The N8001 and N8002 offer a GUI application called Panel Builder. Panels may be utilized as a standalone control option, or as an extension to a Third Party Control System. Panels can be generated for and displayed on any mobile device or PC/Mac. The look and feel is completely customizable. Programming, Design, and Implementation is incredibly fast using the built in-controls. For more information on Panel Builder please visit the following http://svsiav.com/products/management-systems/.

For more information on how to integrate Panel Builder as your control interface, please contact our Pre-Sales technical team for additional information and training resources.

ADDITIONAL HELP:

For additional information, or troubleshooting please contact SVSi Technical Support between 8:00 AM and 5:00 PM Central Standard Time at 256-261-7143 or email support@svsiav.com.

Encoder Commands

Command	Required Variables	Example Command	Description	N-Series Support	V-Series Support
live	Encoder IP	live 169.254.104.1 <↵	Encoder or decoder to live play mode.	Y	Y
modeoff	Encoder IP	modeoff 169.254.105.25<↵	Disables the encoder from broadcasting any traffic to the network. If any encoders are viewing this stream, they will transition to local play (loss of stream)	Y	Y
local	Encoder IP and Playlist #	local 169.254.30.238 1<↵	Activate a Host playlist. Valid Options are 1-8.	Y	Y
serial	Encoder IP and Serial Command ID	serial 169.254.17.88 29<↵	Sends stored serial command (referenced by CommandID #) to device at IP address. Command not valid for V-Series Encoders	Y	N
serialhex	Encoder, Wait Time, Serial Command HEX	serialhex 1 169.254.17.88 43 4f 4d 4d 41 4e 44<↵	Send raw serial command (HEX) to device through Conductor. Wait time determines time for conductor to automatically ask for the response from the attached device.	Y	N
serialhex	Encode, Wait Time, Serial Command ASCII	serialhex 1 169.254.17.88 "COMMAND"<↵	Send raw serial command (ASCII) to device through Conductor. Wait time determines time for conductor to automatically ask for the response from the attached device.	Y	N
readresponse	encoder IP	readresponse 169.254.17.88<↵	reads the response from a serial command sent from Conductor where "Read Response" checkbox was enabled when command is saved, or serialhex command is utilized.	Y	N
sendir	encoder IP, command name	sendir 169.254.212.1 Play<↵	N-Series Devices Only: Execute IR Command saved on Encoder/Decoder. Reference is by name, and CaSE sensitive.	Y	N
sendirraw	Encoder IP, IR Pronto Code	sendirraw 169.254.38.121 0000 006C 0022 0000 015B 00AD 016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0016 0041 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0622<↵	N-Series Devices Only: Execute IR Command without saving command on device. Uses long form Pronto Hex Codes, provided by equipment manufacturer.	Y	N
audioon	Encoder IP	audioon 169.254.30.238<↵	Enables audio output for encoder or decoder	Y	Y
audiooff	Encoder IP	audiooff 169.254.30.238<↵	Disables audio output for encoder or decoder	Y	Y
enablecc	Encoder IP	enablecc 169.254.105.1<↵	Enables Color Space Correction (use if screen is pink or green)	Y	Y
disablecc	Encoder IP	disablecc 169.254.105.1<↵	Disables Color Space Correction (use if screen is pink or green)	Y	Y
autocc	Encoder IP	autocc 169.254.105.1<↵	Sets Color Space Correction to Auto (N-Series Encoders ONLY)	Y	N
enablehdmiaudio	Encoder IP	enablehdmiaudio 169.254.105.1<↵	Enables HDMI audio on Encoder (if video source is analog, this is disabled by default)	Y	Y
disablehdmiaudio	Encoder IP	disablehdmiaudio 169.254.105.1<↵	Disables HDMI audio, and will only utilize Analog Audio connection	Y	Y
autohdmiaudio	Encoder IP	autohdmiaudio 169.254.105.1<↵	N-Series Only - Encoder detects HDMI audio support via Source EDID information and enables/disables as appropriate	Y	N

Decoder Commands

Command	Required Variables	Example Command	Description	N-Series Support	V-Series Support
switch	Decoder IP and Encoder IP	switch 169.254.104.1 169.254.105.1 <↵	Switch decoder video stream by IP address, if decoder audio follows is enabled, this will switch the audio stream as well.	Y	Y
switch	Decoder IP and Encoder Stream Number	switch 169.254.104.1 212 <↵	Switch decoder video stream by encoder stream number, if decoder audio follows is enabled, this will switch the audio stream as well.	Y	Y
switchaudio	Decoder IP and Encoder IP	switchaudio 169.254.104.1 169.254.105.1 <↵	Switch decoder audio stream by IP address. This will only switch the audio stream. Note - Decoder will have a * next to it's name in the matrix when the device is not set to audio follow video	Y	Y
switchaudio	Decoder IP and Encoder Stream Number	switchaudio 169.254.104.1 212 <↵	Switch decoder audio stream by encoder stream number. This will only switch the audio stream. Note - Decoder will have a * next to it's name in the matrix when the device is not set to audio follow video	Y	Y
audiofollow	Decoder IP	audiofollow 169.254.104.1 <↵	Set the decoder back to audio follow mode. IF currently listening to a different audio stream, box will immediately switch to current video streams audio. Can also be accomplished by sending a switchaudio command to set to stream 0.	Y	Y
live	decoder IP	live 169.254.104.1 <↵	decoder to live play mode.	Y	Y
local	Decoder IP AND Playlist #	local 169.254.30.238 1<↵	Activate a Local playlist. Valid Options are 1-8. Check device limitations, some devices only support playlist 1.	Y	Y
serial	Decoder IP and Serial Command ID	serial 169.254.17.88 29<↵	Sends stored serial command (referenced by CommandID #) to device at IP address.	Y	Y
serialhex	Decoder IP, Wait Time, Serial Command HEX	serialhex 1 169.254.17.88 43 4f 4d 4d 41 4e 44<↵	Send raw serial command (HEX) to device through Conductor. Wait time determines time for conductor to automatically ask for the response from the attached device.	Y	Y
serialhex	Decoder IP, Wait Time, Serial Command ASCII	serialhex 1 169.254.17.88 "COMMAND"<↵	Send raw serial command (ASCII) to device through Conductor. Wait time determines time for conductor to automatically ask for the response from the attached device.	Y	Y
readresponse	decoder IP	readresponse 169.254.17.88<↵	reads the response from a serial command sent from Conductor where "Read Response" checkbox was enabled when command is saved, or serialhex command is utilized.	Y	Y
sendir	Decoder IP, Command Name	sendir 169.254.212.1 Play<↵	Execute IR Command saved on Decoder. Reference is by name, and CaSE sensitive.	Y	N
sendirraw	Decoder IP, IR Pronto Code	sendirraw 169.254.38.121 0000 006C 0022 0000 015B 00AD 016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0016 0041 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0622<↵	Execute IR Command without saving command on device. Uses long form Pronto Hex Codes, provided by equipment manufacturer.	Y	N
audioon	decoder IP	audioon 169.254.104.1<↵	Enables audio output for decoder	Y	Y
audiooff	decoder IP	audiooff 169.254.104.1<↵	Disables audio output fordecoder	Y	Y
dvion	decoder IP	dvion 169.254.104.1<↵	Enables the DVI output of Decoder	Y	Y
dvioff	decoder IP	dvioff 169.254.104.1<↵	Disables the DVI output of the Decoder	Y	Y
enablehdmiaudio	decoder IP	enablehdmiaudio 169.254.104.1<↵	Enables digital Audio Output of Decoder	Y	Y
disablehdmiaudio	decoder IP	disablehdmiaudio 169.254.104.1<↵	Disables digital Audio Output of Decoder	Y	Y

autohdmiaudio	decoder IP	autohdmiaudio 169.254.104.1<↵	Detects display support for digital audio and outputs digital audio if appropriate	Y	N
cropref	Decoder IP, X1Y1, X2Y2 Coordinates	cropref 169.254.104.1 10 10 20 20 <↵	Enables cropping functionality (scaler must be enabled) to the co-ordinates given in the command. X1Y1 are top left corner. X2Y2 are bottom right corner.	Y	N
getStatus	Decoder IP	getStatus 169.254.104.1<↵	Returns the current status of the device in an XML form.	Y	Y

N6123 Network Video Recorder

Command	Required Variables	Example Command	Description
record	DVR IP, Source IP, Record Duration, Record Description	record 169.254.178.49 169.254.30.238 5 MY RECORDING<↵	Start a single channel recording. Record Despcription cannot exceed 250 characters, no special characters are supported.
dsrecord	DVR IP, Source 1 IP, Source 2 IP, Record Duration	dsrecord 169.254.178.49 169.254.30.238 169.254.23.72 5 MY RECORDING 1 and MY RECORDING 2<↵	Start a dual sync recording. Record Description cannot exceed 250 characters, no special characters are supported.
dvrswitch1	DVR IP, New Source IP OR Stream Number	dvrswitch1 169.254.178.49 169.254.30.238<↵	Switches 1st stream on the DVR to a new selection during a recording.
dvrswitch2	DVR IP, New Source IP OR Stream Number	dvrswitch2 169.254.178.49 169.254.30.238<↵	Switches 2nd stream on the DVR to a new selection during a recording.
mpeg	DVR IP, File, Bitrate	mpeg 169.254.178.49 latest 1 bitrate:7500000<↵	Convert the latest specified stream on the DVR to mpeg. 1 for first stream (in dual sync recording) 2 for second stream. Bitrate default is 7500000
mpegall	DVR IP, Beginning & Ending time-frame	mpegall 169.254.178.49 24 0 bitrate:7500000<↵	Convert all files on the DVR from a specified timeframe to mpeg. "24 0" Indicates convert all files recorded from time of command execution back 24 hours.
deletempegfile	DVR IP	deletempegfile 169.254.178.49 latest <↵	Delete the most recent mpeg file recording on the DVR
play	DVR IP, File Index OR "latest" to be played, looping, start offset, stop offset	play 169.254.178.49 latest noloop 0 0<↵ play 169.254.178.49 f.528E37F2.index loop 0 0<↵	Play a specific file from a DVR. Start/Stop Offset in seconds. Offsets start/stop recording by a specific time from the beginning or end of the file. Default is 0 0.
stop	DVR IP	stop 169.254.178.49<↵	Stops playback on DVR
pause	DVR IP	pause 169.254.178.49<↵	Pauses playback on DVR
unpause	DVR IP	unpause 169.254.178.49<↵	Unpauses playback on DVR
fastforward	DVR IP	fastforward 169.254.178.49<↵	Fast Forwards playback on DVR
rewind	DVR IP	rewind 169.254.178.49<↵	Rewinds playback on DVR
deletefile	DVR IP, File to be deleted	deletefile 169.254.178.49 latest<↵	Deletes specified file on DVR
stepforward	DVR IP	stepforward 169.254.178.49<↵	Jumps playback forward
stepreverse	DVR IP	stepreverse 169.254.178.49<↵	Jumps playback in reverse
stoprecord	DVR IP	stoprecord 169.254.178.49<↵	Stops recording on DVR
recordhold	DVR IP	recordhold 169.254.178.49<↵	Holds recording on DVR
recordrelease	DVR IP	recordrelease 169.254.178.49<↵	Releases recording on DVR
playhold	DVR IP	playhold 169.254.178.49<↵	Holds play on DVR
playrelease	DVR IP	playrelease 169.254.178.49<↵	Releases play on DVR
deleteallplaylist	DVR IP	deleteallplaylist 169.254.178.49<↵	Deletes all recorded files on DVR
deleteallmpegs	DVR IP	deleteallmpegs 169.254.178.49<↵	Deletes all MPEG files on DVR
remotecopy	DVR IP	remotecopy 169.254.178.49<↵	Copies all MPEG files to Designated Network Storage Array

N2510 Windowing Processor

Command	Required Variables	Example Command	Description
wpswitch	WP IP, Window #, Source IP	wpswitch 169.254.120.2 1 169.254.30.238<↵	Switches streams on a specific window to a specified source
wpaudioin	WP IP, Source IP	wpaudioin 169.254.120.2 169.254.30.238<↵	Specifies which audio stream to listen to
wpactive	WP IP, Window #	wpactive 169.254.120.2 1<↵	Activates a specific window
wpinactive	WP IP, Window #	wpinactive 169.254.120.2 1<↵	Deactivates a specific window
wpaudioon	WP IP	wpaudioon 169.254.120.2<↵	Turns on Windowing Processor Audio
wpaudiooff	WP IP	wpaudiooff 169.254.120.2<↵	Turns off Windowing Processor Audio
wpmodeon	WP IP	wpmodeon 169.254.120.2<↵	Turn Windowing Processor Mode On
wpmodeoff	WP IP	wpmodeoff 169.254.120.2<↵	Turn Windowing Processor Mode Off
wparrange	WP IP, Window #, Window Arrangement (pixels)	wparrange 169.254.120.2 1 0 0 10 10<↵	Arrange a specific Window on the Processor
wpbackground	WP IP, Background #	wpbackground 169.254.120.2 1<↵	Choose a background for the Windowing Processor
wpcrop	WP IP, Window #, Crop Coord. (pixels)	wpcrop 169.254.120.2 1 0 0 0 0<↵	Adjust the crop settings on a specific window
wppriority	WP IP, Window #, Priority #	wppriority 169.254.120.2 1 1<↵	Set the priority for a specific window.
wpbordon	WP IP, Window #	wpbordon 169.254.120.2 1<↵	Turn on the border on a specific window
wpbordoff	WP IP, Window #	wpbordoff 169.254.120.2 1<↵	Turn off the border on a specific window
wppreset	WP IP, Preset #	wppreset 169.254.120.2 0<↵	Activate an internal preset

ATR201 Audio Transceiver

Command	Required Variables	Example Command	Description
atrswitch	ATR IP, Source IP	atrswitch 169.254.252.121 169.254.30.238<↵	Switch audio on the ATR to a specified source
atrmute	ATR IP	atrmute 169.254.252.121<↵	Mute the ATR's output
atrunmute	ATR IP	atrunmute 169.254.252.121<↵	Unmute the ATR's output
atrtxmute	ATR IP	atrtxmute 169.254.252.121<↵	Disable the ATR's Transmit output

atrtxunmute	ATR IP	atrtxunmute 169.254.252.121<↵	Enable the ATR's Transmit output
atrhpvol	ATR IP, Volume #	atrhpvol 169.254.252.121 50<↵	Set the ATR's Headphone Volume level (0-100)
atrlovol	ATR IP, Volume #	atrlovol 169.254.252.121 75<↵	Set the ATR's Lineout Volume level (0-100)
atrlovolup	ATR IP, Percent to increase	atrlovolup 169.254.252.121 5<↵	Increments the lineout volume by the given value- IE if currently volume is 40 and the command is to increment by 5, this will make the new volume 45
atrlovoldown	ATR IP, Percent to decrease	atrlovoldown 169.254.252.121 5<↵	Decrements the lineout volume by the given value (in percent)
atrhpvolup	ATR IP, Percent to increase	atrhpvolup 169.254.252.121 5<↵	Increments the headphone out volume by the give value (in percent)
atrhpvoldown	ATR IP, Percent to decrease	atrhpvoldown 169.254.252.121 5<↵	Decrements the headphone out volume by the given value (in percent)

Video Wall Commands

Command	Required Variables	Example Command	Description
videowall	Name of Video Wall, Name of Layout	videowall "myVidWall" "fullScreen"<↵	Changes a video wall layout (decoders or with windowing processors) to the new layout
videowallswitch	Name of Video Wall, Name of Layout, Layer to switch, Stream number (or IP of encoder)	videowall "myVidWall" "fullScreen" 1 123<↵	Changes one window within the video wall to a new source. Can be referenced by IP or Stream Numer

Miscellaneous Commands

Command	Required Variables	Example Command	Description
script	Script ID	script 33<↵	Execute the stored script. Script must be saved to conductor prior to executing
goto	Panel ID	goto 50<↵	In a panel builder project, switch to a different panel
tcpclient	IP address of device, port number, command	tcpclient 192.168.10.20 5000 aa bb cc dd<↵	Send Command to destination device (IE - IP controlled projector). Command and port are provided by the device manufacturer.
udpclient	IP address of device, port number, command	udpclient 192.168.10.20 5000 aa bb cc dd<↵	Send Command to destination device (IE - IP controlled projector). Command and port are provided by the device manufacturer. Command is UDP.
reboot	Device IP	reboot 169.254.25.12<↵	Reboot an SVSi device at the IP address specificed.
gc_serial	GC IP, Serial Port #, Serial CMD	gc_serial 192.168.1.166 1:1 6b 61 20 30 20 30 31 0d<↵	Send a serial command through a Global Cache device
gc_openrelay	GC IP, Relay Port #	gc_openrelay 192.168.1.166 3:1<↵	Open a specific relay on a Global Cache device
gc_closerelay	GC IP, Relay Port #	gc_closerelay 192.168.1.166 3:1<↵	Close a specific relay on a Global Cache Device
gc_ir	GC IP, IR Port #, GC IR Command	gc_ir 169.254.250.240 4:3 sendir,1,38000,1,1,347,173,22,22,22,22,22,65,22,22,22,22,22,22,22,22,22,65,22,22,22,22,22,22,22,65,22,22,22,22,22,65,22,22,22,22,22,22,22,22,65,22,22,22,22,65,22,65,22,22,22,22,22,22,65,22,22,22,22,22,65,22,22,22,22,22,22,22,22,22,22,22,65,22,22,22,22,65,22,65

colorspace	For Decoders this will always be 0
hdmiaudio	Always auto for decoders
Resolution	Scaler Output Resolution. IE - 720p60 or 1080p60

ATR201 Status Packet Response

Status Packet Resp <status>169.254.11.20;50;212;enabled;enabled;100;100;100;100;online</status>

Status Packet Field <status>IP address; EncodeStream#;DecodeStream#;TxAudioState;RxAudioState;Lineoutvol_L;lineoutvol_r;hpvol_L;hpvol_r;communication</status>

Field	Values	Notes:
Encode Stream #	1 - XXXXX	
Decode Stream #	1 - xxxxx	
TX Audio State	Enabled | Disabled	
RX Audio State	Enabled | Disabled	
Volumes	0 -100	
communication	online | offline	

N2510 Status Packet Response

Status Packet Resp <status>169.254.25.10;26;1080p;97;enabled;97;9998;98;98;online;</status>

Status Packet Field <status>IP address; EncodeStream#;Output Resolution;Input Audio Stream;Audio State;Win 1 V Source;Win 2 V Source;Win 3 V Source;Win 4 V Source;communication;</status>

Field	Values
Encode Stream #	1 - XXXXX
Output Resolution	Output Resolution of the Window Process - IE - 720p60 | 1080p
Input Audio Stream	1 - XXXXX
Audio State	enabled | disabled
Win 1 - 4 V Source	1 - xxxxx
Communication	online | offline

ITSIMPLYWORKS

Distribution I Switching I Recording I Windowing I Wall Processing I Control

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